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Abstract

Trends in Australian inequality across the twentieth century are now well documented and they closely replicate trends in every other advanced economy: from WWI to the 1970s, inequality fell steeply everywhere, and from the 1970s to the present, it rose just as steeply. Despite following a similar trajectory, Australia remained more egalitarian throughout. Why has it been exceptional and what are its origins? Our previous work has found plenty of evidence documenting a steep fall in Australian income and earnings inequality from 1820 to 1870 (Panza and Williamson 2019a). This paper answers two additional questions. First, what was the level of inequality around 1870 after the fall? While we cannot speak to income inequality in 1870, we do find that earnings inequality was much lower in Australia than in the United States, the United Kingdom, and presumably the rest of Europe. Second, we find that there was no rise in Australian earnings inequality over the half century 1870-1910, but rather a modest fall. These findings rely on the use of an array of primary sources – especially the underutilized government Blue Books reporting annual earnings of an impressive range of white collar occupations – as well as better known secondary sources reporting the earnings of manual workers and farm labor. These occupational (average) earnings data are merged with occupational employment data taken from the censuses to construct social tables for Australia's 1870 earnings distribution. We do the same for postfederation 1910 Australia. This exercise establishes that the source of modern Australia's relative egalitarianism is the middle third of the colonial nineteenth century. We also apply Goldin-Katz (2008) analysis to the half century 1870-1910 thus to identify the sources of slow skill demand and fast skill supply growth. Australia missed a rise up some Kuznets Curve before World War I, a rise so common in Europe and most of its offshoots.

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Always Egalitarian: Australian Earnings Inequality 1870-1910¹

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Abstract

Trends in Australian inequality across the twentieth century are now well documented and they closely replicate trends in every other advanced economy: from WWI to the 1970s, inequality fell steeply everywhere, and from the 1970s to the present, it rose just as steeply. Despite following a similar trajectory, Australia remained more egalitarian throughout. Why has it been exceptional and what are its origins? Our previous work has found plenty of evidence documenting a steep fall in Australian income and earnings inequality from 1820 to 1870 (Panza and Williamson 2019a). This paper answers two additional questions. First, what was the *level* of inequality around 1870 after the fall? While we cannot speak to income inequality in 1870, we do find that earnings inequality was much lower in Australia than in the United States, the United Kingdom, and presumably the rest of Europe. Second, we find that there was no rise in Australian earnings inequality over the half century 1870-1910, but rather a modest fall. These findings rely on the use of an array of primary sources – especially the underutilized government *Blue Books* reporting annual earnings of an impressive range of white collar occupations – as well as better known secondary sources reporting the earnings of manual workers and farm labor. These occupational (average) earnings data are merged with occupational employment data taken from the censuses to construct social tables for Australia’s 1870 earnings distribution. We do the same for post-federation 1910 Australia. This exercise establishes that the source of modern Australia’s relative egalitarianism is the middle third of the colonial nineteenth century. We also apply Goldin-Katz (2008) analysis to the half century 1870-1910 thus to identify the sources of slow skill demand and fast skill supply growth. Australia missed a rise up some Kuznets Curve before World War I, a rise so common in Europe and most of its offshoots.

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1. Twentieth Century Inequality: Australia versus the Rest

Thanks to the impressive work of Anthony Atkinson, Thomas Piketty and many other economists, trends in earnings, income and wealth inequality across the twentieth century are now well established (Atkinson 2008; Atkinson and Bourgingnon 2015; Atkinson and Piketty 2007, 2010; Atkinson, Piketty and Saez 2011; Bengtsson and Waldenstrom 2018; Piketty 2005, 2014). All countries in the OECD experienced a great levelling from World War 1 to the 1970s and almost all experienced a big rise from the 1970s to the present. The timing of the inequality-trend turning point is also very similar across countries. While some underwent more dramatic changes than others, almost all countries for which we have the data exhibit the same trends. Figure 1 illustrates the evolution of the top 1 percent income shares for the US, the UK and Australia between 1913 and 2006.¹ With very few exceptions, all advanced economies exhibited much the same decadal trend-related turning-points. This commonality suggests that twentieth century inequality was driven by the same exogenous forces pretty much everywhere: by the switch from Great Depression to post-war prosperity; from two World Wars to relative world peace; from de-globalization to re-globalization; from anti-immigration to pro-immigration; from baby bust to baby boom; from liberal to conservative tax policies; from regulated to deregulated domestic financial markets; and from closed domestic capital markets to an integrated world capital market. All of these big shocks were shared, and all of them had the same predictable impact on inequality, first lowering it, and then raising it.²

The Australian experience followed a very similar path, with income inequality declining over the first three-quarters of the twentieth century before increasing thereafter. Using tax data, Anthony Atkinson and Andrew Leigh show that the income share of the top 1 percent fell from around 11 percent in 1921 to under 5 percent by 1980 and then rose again to around 9 percent in the early 2000s (Atkinson and Leigh 2007b Table 7.1, pp. 315-6; Atkinson and Leigh 2007a, Figure 1, p. 253).³ Earlier studies portray an analogous story of income inequality decline from the

¹ Our empirical analysis refers only to non indigenous Australians. While the Aboriginal population became a relatively important source of labor in the settler economy from the mid nineteenth century (Lloyd 2010), there are no available statistics on the Aboriginal labor market to allow us to include them into the analysis.

² See the summary in Lindert and Williamson (2016: Chapter 8).

³ See also Saunders (1993) on the decline and rise of inequality with the 1970s as turning point.

pre-World War 1 decade to the post-World War 2 decades, despite using different data and different inequality measures. For example: Noel Butlin (1983) found a fall in the skilled to unskilled wage ratio between 1901 and 1968, an earnings inequality correlate; Jones (1975) documented an income inequality fall between 1914/15 and 1968/9; and McLean and Richardson (1986) reported a considerable leveling in the distribution of per capita family income between 1933 and 1979. The Australian income inequality rise since the 1970s is even better documented (Travers and Richardson 1993; Boehm 1994; World Bank 2019).

Despite the similarities between country-specific inequality trends, it is important to stress that Australia remained much more egalitarian throughout. Table 1 reports top 1 percent income shares for twentieth century Australia, the United States and the United Kingdom. Across the 1920s, when inequality was at a secular peak, the Australian share was only 62 percent of the US and UK average. Following the great leveling, and having reached an inequality trough in the 1970s, Australia again recorded lower figures than the average of the US and the UK, 66 percent. And after the steep rise to the inequality peak in the 2000s, once again Australia recorded much lower figures, only 61 percent of the US and UK average. It is also notable how stable the ratio of Australia to the other two stayed across the twentieth century, while exhibiting the same inequality trends. Why were Australian inequality *levels* so modest across the twentieth century – at least relatively -- and what are their nineteenth century origins? This paper asks whether this relative egalitarianism is rooted in its colonial past well before the 1901 Federation, and well before a set of policies to reduce perceived inequalities were implemented (McLean and Richardson 1986, p. 67) and during decades recording a growth slow down (McLean 2013) and very modest industrialization.

To our knowledge, we are the first to provide an estimate of Australian inequality in the nineteenth century.⁴ True, our previous work found plenty of evidence documenting a fall in earnings and income inequality from 1820 to 1870, a period of exceptional growth in GDP and living standards (Panza and Williamson 2019b). So much for mid-nineteenth century *trends*. What about the *level* of inequality around 1870 and how did it compare with the rest of the world? Was it always more egalitarian than other New World countries and Europe?

⁴ See Maddock and Olekalns (1984) for a review of the available studies on income inequality in Australia between 1914 and 1980.

We overcome the constraints imposed by the lack of income and wealth data before the 1933 census and the tax data reported from the 1920s onwards, by constructing social tables for earnings. Specifically, we build from scratch labor earnings social tables for Victoria, New South Wales and South Australia (the latter using only urban males), which covered about 87 percent of Australian 1870 GDP, in order to estimate its earnings distribution. To this end, we use the colonial censuses to document the occupational structure of the labor force (that is, employment by occupation, gender and location); and two key primary sources for their average earnings by category: the *Sessional Papers* for working class occupations, and the *Blue Books* for white collar jobs, since it lists the annual earnings of all public employees by occupation.

We find that Australia was exceptional in 1870: the distribution of earnings was far more equal than in the United States in the same year (Lindert and Williamson 2016), and even more so compared with the United Kingdom in 1867 (Baxter 1868) and the rest of Europe. Next, we ask whether Australia maintained that exceptionalism over the four decades between 1870 and 1910 by constructing another social table for the latter year, and the answer is yes. Indeed, earnings inequality actually fell over that half century, while it rose in most advanced economies

2. On Building Australian Social Tables

2.1 What's a Social Table?

Social tables were first used to document national income and its distribution across social classes more than four centuries ago by the English political arithmeticians William Petty and Gregory King, writing in the seventeenth century. They were followed in the eighteenth and nineteenth centuries by Patrick Colquhoun, Dudley Baxter and others (for a summary see Lindert and Williamson 1982). Their idea was to rank income earners by various occupations or social classes from the richest to the poorest with their estimated number of income earners and their estimated average incomes. Petty, King, Colquhoun and Baxter used their social tables to derive national income estimates, but in the absence of modern income surveys and tax records, they can also be used to measure inequality. Social tables are especially useful in evaluating pre-industrial societies where classes were clearly delineated, and the differences in mean incomes between them were clear without any fuzzy edges between classes. As such, the social table is a matrix, sometimes with separate columns by gender and location. Most recent uses dealing with inequality

are: Milanovic, Lindert and Williamson (2011) using a large sample of 29 countries from Rome 14 to India 1948 (recently and modestly updated in Milanovic 2018); Lindert and Williamson (2016) for the United States for the years 1774, 1800, 1850, 1860, and 1870; and Burnard, Panza, and Williamson (2018) for 1774 Jamaica.

As we suggested above, in the absence of modern survey data or even tax data to construct Atkinson's top shares, we think social tables offer the best way to estimate earnings or income distributions. While relying on social tables to estimate Australian earnings inequality around 1870 and 1910 has its weaknesses (see section 2.3), it is important to bear in mind that the same weaknesses are shared by our comparators, a US social table for 1870 (Lindert and Williamson 2016: Chapter 6) and a United Kingdom social table for 1867 (our revision of Baxter 1868). While all the above mentioned studies report income distributions (the US and UK document earnings, income and wealth distributions), we are only able (thus far) to estimate annual income distributions for Australia. This is because we have not found data on average property income by occupation. Do earnings distributions typically understate income inequality? Apparently not for one of the three nations being considered here: Lindert and Williamson (2016: Chapter 6) show that for 1870 United States earnings inequality was slightly higher, not lower, than income inequality.⁵ The observation year 1870 is unlikely to characterize 1867 UK: in both newly-settled economies – compared with Europe – had their wealth and property income distribution still dominated by small owner-operated family farms and firms, implying less income inequality than earnings inequality. In any case, modern evidence shows a very high correlation between income and earnings inequality *trends*.

2.2 Constructing Social Tables for 1870 and 1910 Australia

All six of Australia's colonies (New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia) published occupational employment censuses for a date around 1870, but only two have roughly the same occupational earnings detail in their official documents – New South Wales and Victoria – where aggregation between them is possible. South Australia also has some earnings data, but they are limited mostly to urban males. As was true for all British colonies,

⁵ One piece of evidence supporting this assumption is the extensive overlap between occupational hires in the two sectors including clerks, lawyers, porters, messengers, teachers, bakers, cooks, printers, lithographers, composers, clergy, pharmacists, surgeons, physicians, accountants, bankers, store managers common labor and others.

the six Australian colonies also published what were called *Blue Books* which, among other details, report the annual incomes of all public employees by department, occupation, location and gender (e.g. male clerks, matrons, female domestics, porters, police, judges, surgeons, surveyors, engineers, urban common labor, gardeners, stable keepers, carters, cooks, nurses, some artisans, teachers, laundresses, and so on). However, the occupational earnings detail around 1870 is only adequate for the same three colonies – New South Wales, South Australia, and Victoria. According to available GDP estimates (Sinclair 2009), New South Wales and Victoria accounted for 75 percent of Australia’s 1870 GDP (87 percent with the addition of South Australia), thus providing validity to the representativeness of our sample.

The social tables for New South Wales and Victoria are reported in the Appendix. As indicated above, while white collar earnings are taken from the *Blue Books*, some urban unskilled, some artisans, most skilled in the building trades, and all farm labor earnings are missing from the *Blue Books*; these are derived from other sources, mainly Coghlan (1918: v. ii) and the *Sessional Papers* from the House of Commons (1868-1873).

All of these comments on the 1870 data apply to the 1910 data as well, although the latter are much more detailed by occupation. The occupational earnings and employment for both years are described in much greater detail in the Appendix.

2.3 Potential Weaknesses as Australian Earnings Inequality Measures

The colonial and post-federation *Blue Books* report annual earnings for all public employees, but not for private sector employees. In effect, therefore, we assume that public and private sector labor markets were competitive, and that there was no selectivity regarding employee quality. This assumption seems reasonable to us given the relatively small size of the government sector at that time, implying that private sector labor market conditions drove public sector occupational earnings, not the other way around. In addition, public employees almost always had annual work contracts. The same was true of private sector white collar workers, farm labor and domestics. However, it was not true of skilled, semi-skilled and unskilled manual workers: in the private sector, manual labor was hired by the day or week while all white collar workers and most other

public employees were usually paid by the year.⁶ Thus, we assume that the security of annual contracts were offset by higher daily and weekly wages in the more volatile private sector (with high unemployment risk). In any case, the same assumptions are made for the construction of the 1870 social table for the United States and the 1867 social table for the United Kingdom with which comparisons will be made.

In addition, while we can take account of earnings variation within some occupations – e.g. inspectors, clerks and police by grade, domestics by gender – we cannot do so for most unskilled and semi-skilled occupations, and even some artisanal occupations, except when their earnings are reported separately. Thus, each occupation cell in our social tables reports average earnings, calculated from all employees who had their annual earnings listed in that occupation, and that weighted average is then multiplied by the numbers so employed economy-wide as reported in the censuses. In short, while the social tables certainly measure the variance of earnings *between* detailed occupations, and thus reflect schooling and skills, they do not include all the variance *within* those detailed occupation. However, we are not convinced that this is a serious shortcoming of the social tables. After all, most of the earnings variance within occupations (controlling for location) is driven by age, health and luck. To the extent that the occupation-specific distributions of age, health and luck vary little across time and location, the social tables should be effective in gauging differences in earnings inequality across time and space.

3. Australian Earnings Distributions in 1870

Table 2 converts our social table for Australia⁷ -- merging those for Victoria (Table A1) and New South Wales (Table A2) – into a size distribution which yields various inequality summary statistics: top 10 percent earnings share, top 1 percent earnings share, the ratio of the top 10 percent’s average earnings to the bottom 10 percent’s average earnings, the ratio of white collar

⁶ While the *Blue Books* report annual earnings by occupation, the other sources typically report only daily or weekly wages that must be converted to annual earnings by days worked per year assumptions. For the latter, we use Panza and Williamson (2018b), which also tells us how in-kind income is added to the earnings estimates for farm labor and domestics.

⁷ For the 1870 analysis, the label Australia refers to the aggregation of our social tables for New South Wales and Victoria, roughly three quarters of the total colonial economy.

average earnings to common labor's average earnings, and the gini coefficient.⁸ In the discussion that follows, we will rely on the top 1 percent share as our inequality indicator,⁹ but note that these five inequality statistics are highly correlated. The subsequent discussion would hardly be changed if we used any of the remaining four inequality indicators. Table 3 reports the same statistics (except for the white collar to common labor earnings ratio) for the United States in 1870 (using Lindert and Williamson 2016), and the United Kingdom in 1867 (using Baxter 1868). We should stress here, however, that some limitations to Baxter's social table (see Appendix 5, Table A5) suggests that our UK earnings inequality figures are probably biased upwards. Still, we know that *income* inequality was higher in the United Kingdom than in the United States at that time (Figure 1; Lindert and Williamson 2016: Figure 5-3, p. 119). Indeed, the top 5 percent received an amazing 46 percent of total income in 1867 England and Wales (Lindert and Williamson 1982: p. 96), so there is reason to expect a similar earnings inequality gap between the two.

Before considering what Table 2 tells us about Australian earnings inequality across space, note that the data for South Australia are only adequate for estimating urban male earnings inequality (see Appendix 4). Having said so, our estimates show that older, slightly richer (per capita GDP 2.3 percent higher: Sinclair 2009), more industrial (manufacturing value added 9 percent of GDP versus 5.5 percent: Sinclair 2009) and much more urbanized¹⁰ New South Wales recorded higher inequality than Victoria (top 1 percent share 7.37 versus 4.17 percent), but still much lower than the United States (top 1 percent share 9.7). While the South Australian data are not available to speak to colony-wide issues, we can see clearly that urban inequality was lower there (top 1 percent share 4.6 percent) than in New South Wales (top 1 percent shares are 6.9 percent versus 4.6 percent). Table 2 also repeats what is almost always found for every country and time: namely, rural earnings inequality was far less than urban inequality in both New South Wales and Victoria but more so in New South Wales (top 1 percent share 7.63 percent versus 5.04 percent) than in Victoria (4.33 versus 3.66 percent).

⁸ In addition, Appendix Table A4b reports the "Australian" size distribution by decile.

⁹ Appendix Table A4b reports 1870 earnings shares for all ten deciles.

¹⁰ The urban employment share of total employment in New South Wales was double that of Victoria. But note that this figure relates to employees not to the working population. Recall that our earnings social tables document employees and omit self-employed workers on family farms and in family firms.

Next, consider the role of gender. Not surprisingly, women were paid considerably less than men, even when doing the same work: in towns, female common labor received only 55 percent of their male co-worker's pay in both colonies (Tables A1 and A2).¹¹ But female labor participation in paid work was so low that their inclusion in the distribution calculations raises the inequality statistics very little. For Australia as a whole, the top 1 percent received 5.48 percent when females are excluded, but 5.83 percent when they are included. To repeat, the difference is modest simply because female participation in the paid labor market was modest.

Finally, consider the central question that motivates this section: Was 1870 Australia a relatively egalitarian place compared with the United States and the United Kingdom? In this paper, the comparison will be limited to the United States and the United Kingdom primarily because very few other countries supply such earnings data. The comparison reported in Table 3 is unambiguous: Australia was a far more egalitarian place in 1870. The top 1 percent share was 5.8 in Australia, 9.7 percent in the United States and 16.8 percent in the United Kingdom. Thus, earnings inequality was only 60 percent of the US, 35 percent of the UK (but an upward bias for UK inequality contributing to a downward bias to the relative Australia estimate), and about 50 percent of the average of the two. This is a remarkable finding: given that the same figure for income inequality was 62 percent in the 1920s and 61 percent in the 2000s. It appears that Australia's relative egalitarianism has persisted for a century and a half, although that leadership may have eroded a bit between the 1870s and the 1920s. Was the erosion in Australian distribution leadership due to rising inequality there or a fall in the UK, the US or both? Available evidence on income inequality trends suggests that it was likely to have been the latter since Figure 1 points to a fall in British income inequality between 1870 and 1920; and the next section will show that Australian earnings inequality actually fell between 1870 and 1910.

4. Did Australian Earnings Inequality Rise or Fall from 1870 to 1910?

4.1 Assessing the 1910 Earnings Distribution

¹¹ As we shall see, the figure was higher in 1910, 66.7 percent, so that there was some reduction in the gender pay gap over those five decades.

Tables 4 and 5 summarize our estimates of Australian earnings inequality in 1910.¹² Consider gender issues first. Table 4 shows that the distribution of earnings among females was much more equal than among males, simply because women were rarely employed in high-skilled and high-paying jobs. In New South Wales, the gini coefficient was 0.304 for males and 0.249 for females, while the top 10 percent shares were 26.35 and 23.83 percent. The same was true for Australia as a whole, the ginis being 0.378 and 0.282. Male experience clearly dominated the total earnings distributions: the male gini in New South Wales was 0.304 while the gini for the two combined was 0.306. When aggregating across gender, the pay gaps between them certainly raised the gini above that of males, but it did not do so by much, from 0.304 to 0.305. As in 1870, female participation in the labor market was still too modest in 1910 to have a significant impact on total inequality. However, not only did women face job discrimination in high skilled occupations, they also faced wage discrimination within almost every occupation. This was especially true of white collar jobs where women earned only 68 percent of men, but even for lower skilled jobs – like domestic servants, farm labor and urban common labor -- where they earned 71-78 percent of men (Table 5).

Next, consider the impact of job distributions across Australian states. Using Australian employment weights, the gini was much higher, 0.373, than in New South Wales. 0.306, simply because there were many more low-paying jobs – farm labor and non-farm unskilled labor – in the more newly settled, less urban and less industrial states like Queensland, Tasmania, South Australia and Western Australia.

4.2 Did Earnings Inequality Rise or Fall? Still Egalitarian in 1910?

Did Australia remain egalitarian between 1870 and 1910? Did a relatively equal distribution of earnings persist over the half century? Table 6 supplies the answers. The first fact

¹² We simplify by referring to the year 1910, while the social tables and these summary tables actually refer to the 1910 *Blue Book* and the 1911 *Census*. In addition, and to repeat table notes and text, 1910 “Australia” refers to the Commonwealth’s total occupational employment figures but to New South Wales for the occupational earnings. Resources permitting, we plan in future versions of this paper first to exploit the earnings data in Victoria’s *Blue Book* and next, if time permits, that of the other four states. Tables titled by New South Wales use both the earnings and employment data of that state. The 1870 tables use the earnings data from both Victoria and New South Wales (section 3 and Appendix 4), not just the latter. However, as we can see in Appendix 4, the earnings structure was quite similar in the two 1870 colonies, and we expect the same for those two states.

to note there is how little average white collar earnings changed over those fifty years, a fall of 17 percent in New South Wales and a rise of 16 percent for Australia as a whole. In contrast, unskilled urban worker's earnings more than doubled in both New South Wales (up by 2.16 times) and all Australia (up by 2.51 times). Thus, the ratio of white-collar average earnings at the top to that of urban common labor at the bottom fell steeply from 7.11 to 2.74 in New South Wales. However, farm labor's earnings remained relatively stable. Thus, the rural-urban earning gap rose over the half century.

Although farm wage trends must have produced a partial offset, the non-farm earnings trends certainly are consistent with a fall in earnings inequality between 1870 and 1910. And so it did. The gini coefficient fell from 0.399 to 0.306 in New South Wales and from 0.411 to 0.373 in all Australia. To take another example, the top 1 percent share fell from 7.37 to 5.31 percent in New South Wales and from 5.48 to 5.44 percent in all Australia. Appendix Table A6c shows that the earnings compression took place everywhere up and down the decile ladder.

While there was a fall in earnings inequality from the beginning to the end of the half century, our evidence does not speak to the possibility that it first rose and then fell. Perhaps it did. A recent paper by Mike Pottenger and Andrew Leigh used executive earnings data from the BHP Billiton company to document the ratio of high executive salaries to average Australian earnings from 1887 to 2012. Although their evidence is only for one company and covers only about half of our period, their results might still be suggestive. The series for directors shows a steep rise 1887-1892, and then an equally steep fall thereafter (Pottenger and Leigh 2018: Figure 1, p. 5) while the one for the CEOs shows volatility 1887-1902 followed by a steep fall (Figure 2, p. 7). This somewhat limited earnings inequality evidence does suggest that our half century may have undergone an early rise and then a later fall, with a modest net decline overall. As far as we know, there is no other published evidence that speaks to these issues in the half century before the Great War.

4.3 Searching for Explanations

Trends in earnings inequality can best be understood by explaining the skill premium, or the earnings gap between high-skilled white-collar employees and that of low-skilled manual labor. And as Claudia Goldin and Lawrence Katz (2008) have shown for the United States across the twentieth century, earnings inequality fell when the demand for skills grew slower than the

supply, and rose when skill supply grew slower than demand. They dubbed it as a race between schooling and technology. Did schooling and skills grow faster than demand in Australia between 1870 and 1910? Available statistics generally suggest that it was the case: despite sustained GDP growth, the industries relying more heavily on white collar and skilled labor grew a bit slower than GDP. At the same time, the skilled labor supply bottlenecks which characterized Australia during early settlement (Panza and Williamson, 2019a) were overcome by rapidly growing native born skilled and schooled labor augmented by relatively skilled and schooled immigrants from the United Kingdom (Hatton 2019).

As a proxy for relative demand growth for skills, we use the performance of manufacturing and modern service sector GDP shares, given that these industries were more white collar-cum-skill-intensive than farming, mining or the pastoral sector. Between 1870 and 1910 total output in New South Wales manufacturing and services both grew slower than agriculture: an average yearly growth rate of 4.4 percent for manufacturing, 3.9 percent for services and 4.9 percent for the primary sector (Sinclair 2009). This modest structural change is in sharp contrast with industrialization events in North America and Europe, a performance that came to be called their “second industrial revolution”. More to the point, the Australian output trends lagged behind the increase in Australian skill supply, as documented by available schooling data: indeed, the Australian colonies were among the international leaders in the provision of primary education (Seltzer 2015: p. 93). Free and compulsory primary schooling was introduced in the late 1860s in all colonies. By the late nineteenth and early twentieth century about 98 percent of the New South Wales population could read and write (Pope 1989). School enrolment rates grew fast over time and by 1880, they surpassed all European countries for which data are available (Lindert 2004). Another key contributor to the supply of skilled workers came from immigration, as shown by Glen Withers (1989) some time ago, between 1877 and 1910 most immigrants belonged to skilled and semi-skilled occupations, and more so than the native born. More recently, Timothy Hatton (2019) has shown that this was more true of Australia and New Zealand than Canada and, especially, the United States. Based on the occupations of UK emigrants, the skilled shares between 1877 and 1913 averaged 51.3 percent for Australian immigrants, 37.2 percent for American immigrants, and 30.8 percent for Canadian immigrants (Hatton 2019: p. 14). Furthermore, the share of Australian immigrants that were Irish – the poorest source region of the

UK emigrants – was huge in the 1850s and 1860s but then dropped steeply to 10.5 percent between 1877 and 1913 (Hatton 2019: pp. 8 and 17).

Late in the period, labor policies also played a role in lowering skill premia by legislation, which served to regulate wages in favor of low skilled manufacturing workers.¹³ That Australia remained a “workers’ paradise” at the turn of the twentieth century has also been noted by Australian historians: for example, Peter Macarthy (1971) points to the existence of extremely high wages especially for unskilled workers.

Finally, while the key driver of the egalitarian earning distribution in the 1870-1910 period was the urban leveling forces listed above, it was partially offset by a big rise in the urban-rural earnings gap. The shift towards a more urban-based economy is illustrated by New South Wales in Table 7. The labor force in the primary sector declined, and the reasons are not hard to find. Figure 2 plots a decline in land acreage per capita, a trend matched by an increase in land values per acre, particularly of rural land (Taylor 1992). Relative export prices showed no fall over the period (data underlying Williamson 2008), so increasing land scarcity must have put downward pressure on labor productivity growth and thus rural wages relative to urban.

5. Road Map for Future Research

Australian earnings inequality was already very low in 1870, lower than the United States, and much lower than the United Kingdom. And it was even lower in 1910 than 1870, although similar earnings distribution data are not yet available for the US and the UK thus to know whether Australian *relative* egalitarianism persisted over the half century (although it was certainly true of income inequality in the 1920s: see Atkinson and Leigh 2007a, 2007b). Our new evidence is also consistent with the Goldin-Katz model: in the Australian case, schooling and skill growth over the half century 1870-1910 exceeded demand growth.

What remains to be done? While this paper has been able to use Australian occupational employment data to construct our earnings social tables for 1870 and 1910, our 1910 occupational earnings data are for New South Wales only. It is certainly possible to augment the earnings

¹³ Australia and New Zealand were the first two countries to pass minimum wage legislation. Furthermore, a set of laws were enacted prohibiting child labor, women’s work at night and setting maximum working hours (Huberman and Meissner 2010).

evidence to include the other five colonies/states. The evidence is easy to gather for the manual trades, but it is very hard to extract the white collar occupational earnings evidence from the *Blue Books*. A still more difficult task would be to uncover property incomes by occupation thus to speak to income inequality. In addition, we need an earnings social table for the 1920s thus to hook up with the Atkinson-Leigh twentieth century income inequality series and also to compare our early twentieth century earnings inequality estimates with already available late twentieth century estimates. And can we identify which was doing most of the work creating such an egalitarian place by 1910? Was it the macro labor market forces elaborated above, or was it the rise in literacy and numeracy generated by public schooling, or was it the influx of skilled and schooled immigrants (perhaps induced by agents' preferring skilled for steerage subsidies), or was it wage regulations introduced late in the half century? One way to find out is to build another earnings social table for 1890, before that legislation was introduced.

So, while the sources of Australian egalitarianism can be found as far back as 1870, we do not yet know which were the main driving forces, a slow conversion from primary product specialization to urban-industrial activities, a big policy commitment to schooling, the attraction of high skilled immigrants, or wage regulation. To the extent that schooling, immigration and wage policies mattered greatly, then perhaps economics should yield to political economy. That is, why were these policies followed so aggressively in Australia, so much more than elsewhere? Persistence matters: the egalitarian distribution of 1870 established a norm which became a powerful driver for the 150 years that followed.¹⁴

¹⁴ There are other historical cases where this persistence has been stressed, the most important being Latin America where its extensive modern inequality is thought to have its roots in Iberian colonialism five centuries ago (Engerman and Sokoloff 2012; Williamson 2015).

References

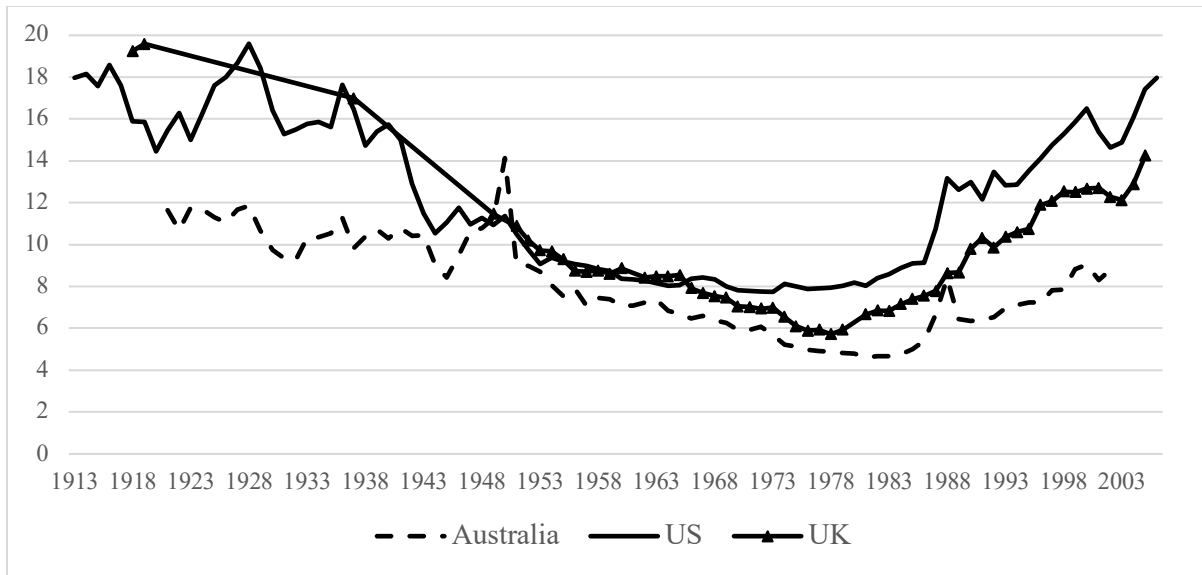
- Atkinson, Anthony B. 2008. *The Changing Distribution of Earnings in OECD Countries*. Oxford: Oxford University Press.
- Atkinson, Anthony B. and François Bourgingnon (eds.) 2015. *Handbook in Income Distribution*. Amsterdam: North Holland.
- Atkinson, Anthony B. and Andrew Leigh 2007a. “The Distribution of Top Incomes in Australia,” *The Economic Record* 83, 262: 247-61.
- Atkinson, Anthony B. and Andrew Leigh 2007b. “The Distribution of Top Incomes in Australia”, in Atkinson, Anthony B. and Thomas Piketty (eds.). *Top incomes over the Twentieth Century: a Contrast between Continental European and English-speaking Countries*. New York: Oxford University Press, pp. 309-332.
- Atkinson, Anthony B. and Thomas Piketty (eds.). 2007. *Top incomes over the Twentieth Century: a Contrast between Continental European and English-speaking Countries*. New York: Oxford University Press.
- Atkinson, Anthony B. and Thomas Piketty (eds.). 2010. *Top incomes: A Global Perspective*. Oxford: Oxford University Press.
- Atkinson, Anthony B., Thomas Piketty, and Emmanuel Saez. 2011. “Top Incomes in the Long Run of History,” *Journal of Economic Literature* 49, 1 (March): 3-71.
- Baxter, R. D. 1868. *National Income: The United Kingdom*. London: Macmillan.
- Bengtsson, Erik and Daniel Waldenstrom 2018. “Capital Shares and Income Inequality: Evidence from the Long Run,” *Journal of Economic History* 78 (3): 712-43.
- Boehm, E. 1994. “A Review of Income Inequality in Australia,” Institute of Applied Economics.
- Burnard, Trevor, Laura Panza and Jeffrey G. Williamson 2019. ” Living Costs, Real Incomes, and Inequality in Jamaica c1774,” *Explorations in Economic History* 71 (January): 55-71.
- Butlin, Noel G. 1983. ‘Trends in Australian Income Distribution: A First Glance’. Working Paper No 17, Department of Economic History, Australian National University

- Engerman, Stanley L. and Kenneth L. Sokoloff 2012. *Economic Development in the Americas since 1500: Endowments and Institutions*. New York: Cambridge University Press.
- Goldin, Claudia and Lawrence Katz 2008. *The Race Between Education and Technology*. Cambridge, MA: Belknap Press.
- Greasley, David and Jakob B. Madsen 2016. “The Rise and Fall of Exceptional Australian Incomes Since 1800,” *Australian Economic History Review* 57, 3: 264-90.
- Hatton, Timothy J. 2019. “Emigration from the UK 1870-1913: Quantity and Quality,” unpublished (June).
- Huberman, Michael and Christopher M. Meissner 2010. “Riding the wave of trade: the rise of labor regulation in the Golden Age of Globalization”, *The Journal of Economic History*, 10 (3).
- Jones, F. L. 1975. The Changing Shape of the Australian Income Distribution, 1911/15-1968/69
- Lindert, Peter H. 2004., *Growing Public: Social Spending and Economic Growth since the Eighteenth Century* (New York : Cambridge University Press).
- Lindert, Peter H. 2015. “Three Centuries of Inequality in Britain and America,” in A. B. Atkinson and F. Bourgingnon (eds). *Handbook in Income Distribution*. Amsterdam: North Holland, pp. 167-216.
- Lindert, Peter H. and Jeffrey G. Williamson 1982. “Revising England's Social Tables, 1688-1812,” *Explorations in Economic History* 19, 4 (October): 385-408.
- Lindert, Peter H. and Jeffrey G. Williamson 2016. *Unequal Gains: American Growth and Inequality since 1700* .Princeton, N.J.: Princeton University Press.
- Macarthy, P. G. 1971. “Wages in Australia, 1891–1915”, *Australian Economic History Review*, 10 (1).
- Maddock, R., Olekalns, N., Ryan, J., and Vickers, M. 1984. The distribution of income and wealth in Australia 1914–80: An introduction and bibliography. *Source Papers in Economic History* (1).
- McLean, Ian W. 2013. *Why Australia Prospered: The Shifting Economic Sources of Economic Growth*. (Princeton, N.J.: Princeton University Press.

- McLean, Ian W. and Richardson, S. (1986). More or less equal? Australian income distribution in 1933 and 1980. *Economic Record*, 62(1), 67-81.
- Milanovic, Branko 2018. "Towards an explanation of inequality in premodern societies: the role of colonies, urbanization, and high population density," *Economic History Review* 71, 4: 1029-47.
- Milanovic, Branko, Peter H. Lindert, and Jeffrey G. Williamson 2011."Pre-Industrial Inequality," *Economic Journal* 121 (March): 255-72.
- Panza, Laura and Jeffrey G. Williamson 2019a. "Squatters, Convicts, and Capitalists: : Dividing Up a Fast-Growing Frontier Pie, 1821-1871" *Economic History Review* 72, 1 (May): 568-594.
- Panza, Laura and Jeffrey G. Williamson 2019b. "Living Costs and Living Standards: Australian Development 1820s-1870s," *European Review of Economic History* (forthcoming).
- Pottenger, Mike and Andrew Leigh 2018. "Long-Run Trends in Australian Executive Remuneration: BHP, 1887-2012," *Australian Economic History Review* 56 (1): 2-19.
- Piketty, Thomas. 2005. "Top Income Shares in the Long Run: An Overview," *Journal of the European Economic Association* 3(2-3): 1-11.
- Piketty, Thomas. 2014. *Capital in the Twenty-First Century*. Cambridge, Mass.: Belknap Press.
- Pope, D. 1989. "The relevance of human capital", in D. Pope and L. Alston (eds), *Australia's Greatest Asset: Human Resources in the Nineteenth and Twentieth Centuries* (Sydney: Federation Press).
- Saunders, P. 1993. "Longer run changes in the distribution of income in Australia". *Economic Record*, 69(4), 353-366.
- Seltzer, A. (2015). "Labour, skills and migration." In S. Ville and G. Withers (eds.), *The Cambridge Economic History of Australia* (Cambridge: Cambridge University Press), pp. 178-201.
- Sinclair, W. A. 2009. *Annual Estimates of Gross Domestic Product: Australian Colonies/States 1861-1976/77*, Working Paper, Department of Economics, Monash University (September).

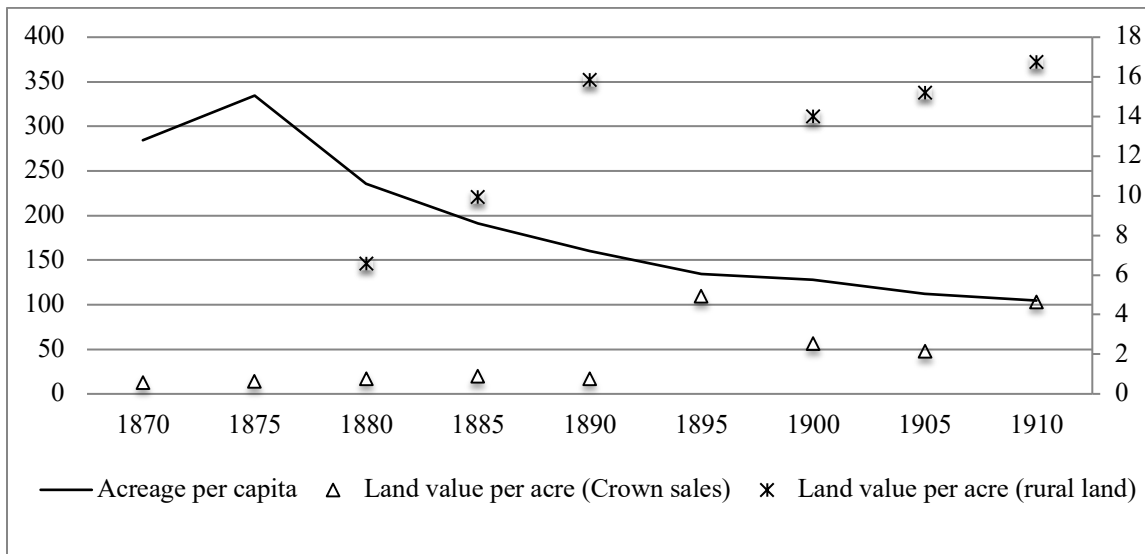
- Taylor, A. D. (1992), *The Value of Land in Australia before 1913*, ANU Source Paper in Economic History (Canberra: ANU).
- Travers, P. and S. Richardson 1993. *Living Decently: Material Well-being in Australia*, Oxford: Oxford University Press.
- Vamplew, W. (1987) (ed.), *Australians: Historical Statistics* (Broadway: Fairfax, Syme and Weldon).
- Williamson, Jeffrey G. 2015. “Latin American Inequality: Colonial Origins, Commodity Booms, or a Missed 20th Century Leveling? *Journal of Human Development and Capabilities* (special issue) 16 (August): 324-41.
- Withers, Glen 1989. “The immigration contribution to human capital formation’, in D. Pope and L. Alston (eds), *Australia’s Greatest Asset: Human Resources in the Nineteenth and Twentieth Centuries* (Sydney: Federation Press).
- World Bank 2019. Webpage <https://data.worldbank.org/indicator/si.pov.gini> accessed May 2019.

Figure 1: Top 1% income shares in Australia, UK and US, 1913-2006



Source: Atkinson and Piketty (2007).

Figure 2: Acreage per capita in NSW, 1870-1910



Source: Acreage per capita, left axis: Vamplew (1987). Land value per acre in £, right axis: Taylor (1992).

Table 1. Income Shares of Top 1%, 1920s-2000s, Australia, the UK and the US

	<i>Australia</i>	<i>United Kingdom</i>	<i>United States</i>	<i>Average (UK & US)</i>	<i>Australia/Average</i>
1920s	11.37	19.59	16.98	18.29	0.62
1970s	5.35	8.37	7.9	8.14	0.66
2000s	8.71	12.67	15.69	14.18	0.61

Sources: Australia, the UK and US are from Atkinson and Piketty (2007: Tables 4.1, 5A.1, 7.1).

Table 2. Comparative Earnings Inequality across the Australian Colonies 1870**A. Using both Male and Female**

	<i>Total</i>	<i>Urban</i>	<i>Rural</i>
New South Wales			
Top 10% vs bottom 10%	31.45	31.36	19.01
Top 10% share (%)	34.40	39.00	22.27
Top 1% share (%)	7.37	7.63	5.04
Top 10% mean income (£)	813.79	827.02	466.43
Gini coefficient	0.399	0.480	0.273
Victoria			
Top 10% vs bottom 10%	16.15	16.07	15.72
Top 10% share (%)	27.46	29.38	21.64
Top 1% share (%)	4.17	4.33	3.66
Top 10% mean income (£)	689.38	685.47	623.58
Gini coefficient	0.353	0.377	0.271
Australia (VIC + NSW)			
Top 10% vs bottom 10%	26.90	26.17	23.57
Top 10% share (%)	33.53	33.05	30.89
Top 1% share (%)	5.83	5.54	5.81
Top 10% mean income (£)	706.14	703.36	621.37
Gini coefficient	0.426	0.438	0.369

B. Using only male labor force

	<i>Total</i>	<i>Urban</i>	<i>Rural</i>
New South Wales			
Top 10% vs bottom 10%	22.16	24.27	9.80
Top 10% share (%)	32.72	36.22	21.27
Top 1% share (%)	6.75	6.90	4.99
Top 10% mean income (£)	813.79	907.49	323.38
Gini coefficient	0.377	0.455	0.274
Victoria			
Top 10% vs bottom 10%	11.73	10.18	11.79
Top 10% share (%)	27.35	28.89	21.47
Top 1% share (%)	4.18	4.22	3.61
Top 10% mean income (£)	689.38	685.47	623.58
Gini coefficient	0.343	0.367	0.263
South Australia			
Top 10% vs bottom 10%		13.42	
Top 10% share (%)		27.26	
Top 1% share (%)		4.57	
Top 10% mean income (£)		624.26	
Gini coefficient		0.361	
Australia (VIC + NSW)			
Top 10% vs bottom 10%	16.60	17.49	15.65
Top 10% share (%)	32.12	31.27	30.09
Top 1% share (%)	5.48	5.15	5.64
Top 10% mean income (£)	742.98	774.50	651.14
Gini coefficient	0.411	0.409	0.356

Sources: Appendices 1, 2, and 3.

Table 3. Earnings Inequality around 1870: the US and the UK

	Top 10% share (%)	Top 1% share (%)	Gini coefficient
United States	44.5	9.7	0.546
United Kingdom	47.5	16.8	0.625

Sources: The US figures are from Lindert and Williamson (2016, Table 6.5, p.156). The UK figures are derived from Baxter (1868) and see Appendix 5.

Table 4. Earnings Inequality in Australia, 1910

	<i>Using NSW employment weights</i>			<i>Using AUS employment weights</i>		
	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>
Top 10% vs bottom 10%	11.05	10.58	8.45	10.27	10.60	6.04
Top 10% share (%)	25.93	26.35	23.83	31.11	31.52	24.91
Top 1% share (%)	5.31	5.04	3.31	5.44	5.19	4.74
Top 10% mean income (£)	625.67	632.77	409.22	604.89	617.61	420.34
Gini coefficient	0.306	0.304	0.249	0.373	0.378	0.282

Table 5: Earning Ratios in New South Wales, 1910

Occupation category	Mean earnings (£)	N. occs	Mean earnings Male (£)	Mean earnings Female (£)	Female/Male
White collar	316.14	73	330.90	225.11	0.68
Urban common labor	108.19	10	108.40	79.56	0.73
Domestic/servant	80.92	11	103.31	80.92	0.78
Farm	86.43	16	86.7	61.48	0.71
All categories	198.65	197	206.70	144.01	0.696

Notes: This Table is based on NSW labor weights. White collar includes Officials (High, Legal), Officers (Military, Penal, Police, Church, Charity, Health, Scientific Dept., Education Dept., Telephone, Ferry, Harbor), Judges, Clerks, Magistrates, Bailiffs, Barristers/Solicitors, Clergy, Sanitary Inspectors, Medical Practitioners, Medical and Hospital Attendants, Dentists, Pharmacists, Nurses, Midwives, Veterinarians, Chemists, Assayers, Geologists, Biologists/Botanists, Civil Engineers, Engineers, Surveyors, Architects, Draftsmen, University Professors, Teachers (Grammar/High School, State, Church, Private, Music, and Language Schools, Technical Colleges), Tutors, Photographers, Musicians, Bankers/Brokers, Accountants/Auditors, Actuaries, Underwriters, Auctioneers, Storekeepers, Managers (Government Store, Factory, Farm, Station, Store), Undertakers, Postmasters/Sorters, Letter Carriers, Mailmen, Stationmasters (Telegraph, Railway), Electricians/Linemen, Barristers, and Station Agents. Urban common labor includes: Stevedores/Wharf Labor, Watermen, Laborer, Street Cleaners/Chimneysweepers, Deliverymen, Draymen/Carters/Teamsters, Road labor (navvy), Messengers, Railroad Labor, Wood choppers. Farm labor includes: Laborer (Farm, Fruit, Vineyard, Sugar, Pastoral, Dairy, Poultry Farm, Pig farm), Market gardener, Nurseryman, Station Agent, Horsekeeper, Fisherman, Forestry worker, Stablekeeper, Woolwasher.

Table 6: Australian Earnings Inequality Trends 1870 - 1910

Weighted earnings (£)	Using NSW labor weights			Using AUS labor weights		
	1910	1870	Ratio 1910/1870	1910	1870	Ratio 1910/1870
White collar	275.60	331.21	0.83	348.84	300.24	1.16
Urban labor	100.47	46.56	2.16	111.65	44.54	2.51
Farm labor	71.85	68.46	1.05	61.80	73.51	0.84
Earnings ratios						
White collar/ urban common labor	2.74	7.11	0.38	3.12	6.74	0.46
White collar/ farm Labor	3.84	4.84	0.79	5.64	4.08	1.38
Inequality indicators						
Gini index	0.306	0.399	0.77	0.336	0.411	0.91
Top 10% share (%)	25.93	34.40	0.75	31.11	32.12	0.97
Top 1% share (%)	5.31	7.37	0.72	5.44	5.48	0.99

Note: Earnings weights are based on occupational' employment shares within each category. The white collar, urban common and farm labor categories are defined in Table 5. white collar in 1870 include: Assistants, Accountants, Auctioneers, Bankers, Brokers, Architects, Artists, Authors, Editors, Reporters, Civil engineers, Clergy, Dispensing Chemists, Dentists, Chiropractors, Harbor pilots, Lighthouse keepers, High government Officials, Judges, Lawyers, Barristers/Solicitors, Clerks, Physicians, Surgeons, Policemen, Jailers, Professors, Schoolmasters, Teachers. Urban labor refers to labor employed in towns. Farm labor refers to all farm types and pastoral labor. For 1870, Australian labor force weights include employment in New South Wales, South Australia (males only) and Victoria.

Table 7: Labor force shares by sector, 1870-1910

Sector	1870	1910
Farm labor	0.25	0.16
Manufacturing (skilled/semi-skilled)	0.16	0.28
Mining	0.10	0.07
Service (non-white collar)	0.21	0.22
Service (white collar)	0.09	0.16
Common labor (unskilled)	0.19	0.11

Source: Authors calculations based on census data: *New South Wales Census of 1871* and *The First Commonwealth Census* (1912).

Appendix 1: Victoria 1870

Appendix Table A1 reports our social table for earnings in Victoria around 1870. To fit in the table cells reported here, the occupations listed in the table are selective, but the complete list can be found at the end of Appendix 4. The employment figures are from the *Census of Victoria, 1871: General Report and Appendices* (John Ferres, Government Printer, Melbourne, 1871-1874). All white collar and some working class and artisan earnings data are taken from the *Blue Book of the colony of Victoria for the year 1867* (John Ferres, Government Printer, Melbourne, 1868). Urban working class and farm earnings (e. g. farm labor, building trade workers, blacksmiths, cooks, grooms, stable keepers, gardeners, female domestics, housemaids, nursemaids, laundresses, common labor, and seamen) are all constructed from Timothy A. Coghlan, *Labour and Industry in Australia*, v. II, chap. 2 (Melbourne: Oxford University Press, 1918) and the House of Commons, *Sessional Papers: Statistical Tables relating to the Colonial and other Possessions of the United Kingdom*, Parts XIV-XV (1868- 1875). We also constructed and include estimates of in-kind income for farm labor, seamen and domestics as well as converting daily and weekly wages in to annual earnings as explained in Panza and Williamson (2018b). Teacher salaries are from *Parliamentary Paper (Victoria. Parliament), no. 66: Education Act .1872.—Regulations* (Melbourne : Robt. S. Brain, Government Printer, 1889). All earnings in Table A1 are in Australian an pounds.

Table A1. Earnings Social Table for Victoria 1870

Occupation	Gender	Urban employees	Rural employees	Urban earnings	Rural earnings
Accountants, auctioneers, brokers	M	1,293	463	517.93	473.06
Architects, Surveyors, Scientific persons	M	2,386	780	365.99	362.49
Artist, actor, musician	M	740	222	225	210
Assistants clerks	M	31	6	200	189.39
Authors, editors, reporters	M	90	24	472.50	472.50
Barber, hair dresser	M	470	50	159.06	159.06
Blacksmith, locksmith	M	2,240	1,770	126	94.12
Butcher, baker, brewer	M	5104	2396	212.08	212.08
Civil engineers	M	132	54	341.59	341.59
Clergy	M	508	287	393.26	393.26
Commissioner, agent	M	475	90	537	537
Common labor	M	19,346	12,725	58.66	58.66
Dealers, agents, contractors	M	3,988	1,378	525.50	386.32
Domestic	M	18,068	10,181	67.98	67.98
Dressmaker, seamstress	F	6,186	1,396	62.50	46.69

Farm laborer	M	2,867	19,096	90.64	90.64
Farm overseer	M	89	975	244.79	244.79
Fishmonger, milkman	M	825	868	212.08	212.08
Goldsmith, jeweler, engraver	M	970	104	297.20	269.57
Government clerks	M	982	414	294.95	286.55
Harbour pilot, light house keeper	M	154	60	398.85	328.78
Hawkers, peddlers, dealers, shopkeeper	F	730	72	40	40
Hawkers, peddlers, dealers, shopkeeper	M	5,599	3,176	203.40	203.40
High government officials	M	324	189	820.16	596
Hotel & lodging operator	F	57	61	113.57	113.57
Hotel & lodging operator	M	2,809	1,540	183.84	183.84
Judges, lawyers, solicitors	M	575	132	732.79	691.69
Law clerks	M	425	37	391.51	369.55
Machine and tool maker	M	1,228	167	168	125.50
Manager	M	721	88	525.50	386.32
Midwife	F	88	42	36	36
Miner	M	7,596	24,881	177.80	177.80
Nurse	F	602	162	36	36
Pharmacists, dentist	M	480	95	200	189.39
Physicians, surgeons	M	516	201	399.83	376.85
Police, jailers	M	997	406	123.78	123.78
Private sector clerks	M	3,216	442	294.95	286.55
Professors, Schoolmasters	M	10	3	971.88	820.16
Seaman, boatman	M	1,176	1,187	110	110
Skilled workers (textiles, paint, tailor, wood)	M	17,479	1,372	129.5	96.735
Skilled with leather	M	5,301	1,682	126	94.12
Skilled with stone and metal	M	3,631	1,013	147	109.81

Appendix 2: New South Wales 1870

Appendix Table A2 reports our social table for earnings in New South Wales around 1870. To fit in the cells here in the paper, the occupations listed in the table are selective, but the complete list can be found at the end of Appendix 3. The employment figures are from the *New South Wales Census of 1871, Consisting of Report, Summary Tables, and Appendix, and Detailed Tables* (Sydney: Thomas Richards, Government Printer. 1873). All white collar and some working class and artisan earnings data are taken from the *New South Wales Blue Book for the year 1867* (Sydney: Government Printer, 1868). Urban working class and farm earnings (e, g. farm labor, building trade workers, blacksmiths, cooks, grooms, stable keepers, gardeners, female domestics, housemaids, nursemaids, laundresses, common labor, and seamen) are all constructed from Timothy A. Coghlan, *Labour and Industry in Australia*, v. II (Melbourne: Oxford University Press, 1918) and House of Commons, *Sessional Papers: Statistical Tables relating to the Colonial and other Possessions of the United Kingdom*, Parts XIV-XV (1868- 1875). We constructed estimates of in-kind income for farm labor and domestics as well as converting daily and weekly wages in to annual earnings as explained in Panza and Williamson (2018b). We were not able to find common school teacher salaries for New South Wales, so we assumed that Victorian earnings applied. All earnings figures in Table A2 are in Australian pounds.

Table A2. Earnings Social Table for New South Wales 1870

Occupation	Gender	Urban employees	Rural employees	Urban earnings	Rural earnings
Butchers, bakers	F	70	63	26	26
Butchers, bakers	M	1,495	461	102.86	102.86
Fishmongers, fruiterers	F	322	12	26	26
Fishmongers, fruiterers	M	2,862	699	102.86	102.86
Hawkers, peddlers	F	587	43	41.42	36.04
Hawkers, peddlers	M	3,,181	1,131	218	19
Hotel, lodging operator	F	385	101	26	26
Hotel, lodging operator	M	304	706	102.86	102.86
Barber, hairdresser	M	2,488	325	49.72	39.6
Blacksmith, farrier, Locksmith	M	614	205	192	144
Dressmaker, seamstress	F	3,815	419	75.33	55.75
Goldsmith, jeweler, watch maker	M	276	30	186.25	137.83
Printer, compositor, Lithographer	M	633	46	150	120
Skilled with leather	M	864	218	151	120
Skilled with stone	M	4,142	823	100.19	79.8
Skilled worker casual	M	8,148	3,267	56.93	45.77

Wheelwright, coachmaker	M	770	247	177.50	154
Common labor	F	2,369	263	27.50	27.50
Common labor	M	12,551	15,092	56.10	56.1
Domestic	F	10,891	5,127	28.00	20.16
Domestic	M	3,901	2,810	66.00	48
Farm laborer	F	65	1,455	65.71	65.71
Farm laborer	M	4,038	36,565	71.20	71.20
Miners	M	1,836	14,530	150.00	150
Seaman, boatman	M	1,431	418	120.00	100.31
Stevedore, lumper, stoker	M	200		100.31	
Accountant, banker, Merchant	M	1,543	179	407.27	200
Architect, surveyor	M	69	177	150	144.99
Assistants	M	65	6	70	70
Authors, editors, reporters	M	547		505.15	
Civil engineers	M	1,998	415	582	582
Clergy	M	400	104	237.88	160
Dispensing chemists, Dentists	M	225	22	270	270
Harbor pilot and masterr	M	245	70	250	175
High government officials	M	8		1,050	
Judges, lawyers, solicitors	M	273	37	1,472.22	950
Law clerks	M	257	22	403.13	260.13
Physicians, surgeons	M	252	72	270.00	270
Police, jailers	M	706	132	225.00	225
Private sector clerks	F	527	103	49.86	43.38
Private sector clerks	M	3,651	590	262.45	228.33
Teachers, common school	F	1,342	499	75.00	65
Teachers, common school	M	3,114	772	525.74	150.9

Appendix 3. South Australia 1870

Appendix Table A3 only reports employment and earnings of urban males since our sources do not document enough female and rural occupational earnings to include inequality statistics for anything other than urban males. Most earnings data come from the *Blue Book of South Australia for the year 1867* (Government Printer, Adelaide, 1868) with the exception of the following occupations which are derived from the *Sessional Papers: Statistical Tables relating to the Colonial and other Possessions of the United Kingdom*, Parts XIV-XV (1868- 1875): butcher; locksmith; tailor; cabinet maker; skilled with leather; mason, bricklayer; wheelwright; domestic, stevedore; carriage maker; engineer; and lithographer. In addition, barber and hairdresser earnings are from Frederick Sinnett, *An account of the colony of south Australia* (Adelaide, Government Printer, 1863), and teacher earnings are from Kay Whitehead, “Women's life-work: teachers in South Australia, 1836-1906,” Phd thesis, June 1996, Department of Education and Women's Studies, University of Adelaide. The employment data come from the *1876 South Australian Census*.

Table A3. Earnings Social Table for South Australia 1870

Occupation	Urban employment	Urban Earnings
Accountants, bankers, merchants	351	250
Architects, surveyors, scientific persons	257	408.95
Artist, actor, musician	113	225
Assistants, clerks	44	76.25
Authors, editors, reporters	37	300
Barber, hair dresser	30	52
Blacksmith, farrier, locksmith	630	125
Butchers, bakers, brewers	1,073	70
Civil engineers	15	187.5
Clergy	103	300
Commissioner, agent	274	300
Common labor	5,217	45.71
Dispensing chemists, Dentists	99	124.78
Domestic	407	48
Dressmaker, seamstress, tailoress	234	125
Farm laborer	1,145	40.33
Fishmongers, fruiterers	1,144	115
Goldsmith, jeweler, watch maker	142	313.75
Government clerks	305	165.35
Hawkers, peddlers, pawnbroker	358	127.5
High government officials	55	749.55

Hotel & lodging operator	20	150
Judges, lawyers, barristers	75	540.91
Law clerks	70	224.23
Machine and tool maker	313	135
Midwife, nurse	12	93.53
Miners	284	90
Overseer	35	310
Pharmacists, dentist	16	71.18
Physicians, surgeons	59	450
Police, jailers	133	324.63
Printer, compositor, lithographer	350	313.75
Private sector clerks	938	277.67
Professor	3	971.88
Seaman, boatman	454	120
Skilled with leather (boot, shoe, and saddle maker; tanner)	970	116.81
Skilled with stone (mason, bricklayer) and metal	2,485	143.33
Skilled with textiles and wood	1,515	122.5
Stevedore, wharf labor	22	92.5
Teachers, common school	162	120
Tobacconist	34	150
Wheelwright, coachmaker	535	130

Appendix 4: Australia 1870

The Australian earnings social table (Table A4a) simply merges those for Victoria (Table A1) and New South Wales (Table A2). South Australia is excluded since both rural and female occupational earnings data are inadequate for that colony. All earnings data are in Australian pounds.

In the text tables, the gini coefficients derived from Tables A1-A5 use the following algorithm:

$$1 - 2 * \frac{\sum_{i=1}^{i=N} W_i * (\sum_{j=1}^{j=i} W_j * X_j - W_i * X_i / 2)}{\sum_{i=1}^{i=N} W_i * X_i * \sum_{i=1}^{i=N} W_i}$$

where the W are weights based on employment figures and the X are annual earnings (ordered in ascending order).

Following Table A4a, we also report the complete list of occupations which are abbreviated in Tables A1, A2 and A3. Finally, the size distribution underlying Table A4a are reported as decile shares in Table A4b.

Table A4a. Earnings Social Table for Australia 1870

Occupation	Gender	Employment		Earnings	
		Urban	Rural	Urban	Rural
Accountants, auctioneers, brokers	M	2,836	642	457.72	396.92
Architects, surveyors, scientific persons	M	2,455	957	359.92	322.26
Artist, actor, musician	M	740	222	225.00	210.00
Assistants clerks	M	96	12	111.98	129.70
Authors, editors, reporters	M	637	24	500.54	472.50
Barber, hair dresser	M	2,958	375	67.09	55.53
Blacksmith, farrier, locksmith	M	2,854	1,975	140.20	99.30
Butcher, baker, brewer, miller	M	6,599	2,857	187.34	194.46
Butcher, baker, brewer, miller	F	70	63	26.00	26.00
Civil engineers	M	2,130	469	567.10	554.32
Clergy	M	908	391	324.81	331.22
Commissioner, agent	M	475	90	537.00	537.00
Common labor	M	31,897	27,817	57.66	30.44
Common labor	F	2,369	263	27.50	27.5
Dealers, agents, contractors	M	3,988	1,378	525.50	386.32
Domestic	M	21,969	12,991	67.63	63.66
Domestic	F	10,891	5,127	28.00	20.16

Dressmaker, seamstress, tailoress	F	10,001	1,815	67.39	48.78
Farm laborer	M	6,905	55,661	41.64	77.87
Farm overseer	M	89	975	244.79	244.79
Fishmonger, milkman	M	3,687	1,567	127.30	163.36
Fishmonger, milkman	F	322	12	26.00	26.00
Goldsmith, jeweler, engraver,	M	1,246	134	272.62	240.08
Government clerks	M	982	414	294.95	286.55
Harbour pilot	M	399	130	307.45	245.98
Hawkers, peddlers, shopkeeper	F	1,317	115	40.63	38.52
Hawkers, peddlers, shopkeeper	M	8,780	4,307	208.68	154.98
High government officials	M	332	189	825.70	596.00
Hotel & lodging operator	F	442	162	37.29	58.97
Hotel & lodging operator	M	3,113	2,246	175.94	158.39
Judges, lawyers, solicitors	M	848	169	970.84	748.24
Law clerks	M	682	59	395.89	328.75
Machine and tool maker, millwright	M	1,228	167	168.00	125.50
Manager	M	721	88	525.50	386.32
Midwife	F	88	42	36.00	36.00
Miner	M	9,432	39,411	172.39	167.55
Nurse	F	602	162	36.00	36.00
Pharmacists, dentist	M	705	117	222.34	204.55
Physicians, surgeons	M	768	273	357.23	348.67
Police, jailers	M	1,703	538	165.74	148.61
Printer, compositor	M	3,064	476	211.52	202.81
Private sector clerks	M	6,867	1,032	277.67	253.27
Private sector clerks	F	527	103	49.86	43.38
Professors, Schoolmasters	M	10	3	971.88	820.16
Seaman, boatman	M	2,607	1,605	115.49	107.48
Skiled workers	M	25,627	4,639	106.43	60.84
Skilled with leather	M	6,165	1,900	129.50	97.09
Skilled with stone and metal	M	7,773	1,836	122.06	96.36
Stevadore, wharf labor	M	417	81	90.33	90.33
Teachers, common school	M	5,514	2,235	394.28	198.56
Teachers, common school	F	1,342	499	75.00	65.00
Telegrapher, stenographer	M	160	70	132.00	132.00
Tobacconist	M	394	20	212.08	212.08
Wheelwright, coachmaker	M	1,994	553	145.89	120.87

Table A4b: Australian Earnings Distribution by Decile (NSW+VIC) 1870

Decile	Total (%)	Urban (%)	Rural (%)
1st	2.84	2.25	3.04
2nd	3.82	3.89	3.53
3rd	4.42	4.11	4.98
4th	5.46	4.63	7.31
5th	5.94	4.88	8.55
6th	6.12	8.32	8.55
7th	9.04	9.22	8.55
8th	11.51	12.41	8.88
9th	17.32	17.25	15.74
top	33.53	33.05	30.89

Appendix 5: The United Kingdom 1867

The social table for the United Kingdom 1867 comes from R. Dudley Baxter, *National Income: The United Kingdom* (London: Macmillan, 1868), Appendix IV and V. There are three limitations to Baxter's 1867 social table, in rising order of seriousness. First, he does not break down the three manual classes -- skilled, semi-skilled and unskilled -- in to occupations, gender, or urban/rural (although the occupations within these three groups are listed). Second, the top income groups are not identified by occupation, but we eliminate them since these high-income recipients were unlikely to have been employed. Third, his three white collar "middle class" groups do not identify occupation or distinguish between labor earnings and property income. We assume that these "middle class" incomes were overwhelmingly labor income, not property income. To the extent that this was not true, our estimates of UK earnings inequality are upward biased. However, the text offers a defense of their use in comparisons with the US and Australia. All income figures in Table A5 are in pounds sterling.

Table A5. A Social Table for Earnings in the UK 1867

	Total Recipients	Total Income	Average Income
Middle incomes 300-1000	178,300	87,723,000	492.00
Small incomes 100-300	1,026,400	110,950,000	108.10
Lower incomes < 100	1,497,000	81,320,000	54.32
Manual, High Skilled	1,345,000	66,353,000	49.33
Manual, Lower Skilled	5,087,000	160,652,000	31.58
Agriculture and Unskilled	4,529,000	97,640,000	21.56
Total	13,662,700	604,638,000	44.25

Appendix 6: Australian Social Tables 1910

Appendix Table A6a reports our social table for earnings in New South Wales around 1910. Table A6b does the same for Australia as a whole using employment figures for all of Australia, but the earnings structure of NSW (also embodied in Table 6A1). In the future, we hope to revise the earnings estimates by including Victoria (data already collected) and perhaps the other four.

The employment figures are from the *The First Commonwealth Census* (Melbourne: Bureau of Census and Statistics, 1912). The earnings data are taken from the following three sources: *New South Wales Statistical Returns of the Colony (Blue Book)*, Sydney: Government Printer, 1911 (BB in Tables A6a and A6b); *The Official Yearbook of New South Wales, 1910-11*, Sydney: W. A. Gullick, Government Printer, 1911 (YB in Tables A6a and A6b); Peter Macarthy (1967) “The Harvester Judgment: An Historical Assessment”, Unpublished PhD dissertation, ANU (MC in Tables A6a and A6b).

We constructed estimates of in-kind income for farm labor, house servants (domestics), farm station clerks and the clergy, based on detailed board and lodging data contained in the *Blue Books*. Specifically, we augmented annual earnings by 18% to account for in-kind income. All earnings are based on annual averages reported in the original sources, with the exception of:

a) bricklayer, brick maker, founder, molder, house painter, mason, plasterer and silversmith, which were converted from daily earnings, based on 250 working days.¹⁵

b) clothing maker, farm labor (including poultry farm, dairy farm, sugar farm, pig farm) and leathersgoods maker, which were converted from weekly earnings.

We were not able to find barbers and hairdressers earnings, so we assumed a 16.7% wage premium over servants, inferred from NSW earnings in 1870. Managers earnings are inferred from directors earnings as reported in the *Blue Books* for the following occupations: Director of Labour, Secretary to Department of Public Instruction and Director of Education; Director of the Botanic Gardens, Director of the Forests Dept.; Director of the Immigration and Tourist Bureau; Director of the Microbiology Institute. Clergy earnings are based on 19 observations of clergymen in gaols reported in the *Blue Book*, belonging to the following denominations: Church of England, Roman Catholic, Presbyterian, Methodist, Jewish. When female earnings were not reported, we assigned them an average of 66.4% of male earnings, based on data where both wages were available (28 occupations). We did not find earnings data for the following occupations: artists, chemical makers, editor/journalist, irregular clergy, irregular medical practitioner, undertaker, cigar/cigarettes makers, glass maker, confectioner, iceman, lime cutter, miller, paper maker, pottery maker, and stone cutter, all of which representing 10,355 workers. Since these missing observations represent only 1.8% of the total labor force, their omission should not generate a large bias to our inequality estimates. All earnings figures in Table A1 are in Australian pounds.

¹⁵ The 250 figure is commonly assumed in living standard calculations for other regions and times, assuring comparability with Australian estimates in this study, (See Panza and Williamson forthcoming).

Appendix Table A6b reports Australian employment figures from the *The First Commonwealth Census* (Melbourne: Bureau of Census and Statistics, 1912) and annual earnings by occupation based on New South Wales experience around 1910 (as in Table A6a, with the same sources).

Table A6a: New South Wales Earnings Social Table, 1910

Occupation	Labor force		Earnings (£)		Source
	Male	Female	Male	Female	
Accountant, auditor	827	73	346.7	230.2	BB
Actuary, underwrite, auctioneer	3,939	416	346.7	230.2	BB
Architect	613	22	452.6	300.5	BB
Arms maker	62	2	210	139.4	BB
Assayer	113	0	260		BB
Bailiff	107	0	259.1		BB
Baker	6,373	2,813	143.2	95.1	BB
Banker, broker	4,637	20	660	438.2	BB
Barge master, lighterman	90	0	149.6		BB
Barrister	1,185	0	560		BB
Biologist, botanist	36	3	483.8	321.2	BB
Blacksmith	5,487	0	125		YB
Boiler maker	1,877	0	210		BB
Bookbinder	628	1,037	164.3		BB
Boot maker (craftsmen)	2917	0	136.8		MC
Boot maker (factory)	2,854	1606	107.7	71.5	MC
Brick layer	4,021	0	137.5		YB
Brick maker	3,238	0	137.5		YB
Butcher	7,553	170	72	47.8	YB
Meat, fish curer	2,518	113	72	47.8	YB
Carpenters	12,374	0	139.8		YB
Carriage maker	5,333	43	210	139.4	BB
Charity officer	93	147	187	124.2	BB
Charwomen, cleaner	133	703	79	52.7	BB
Chemist	48	1	483.8	321.2	BB
Church officer	27	12	187	124.2	YB
Civil engineer	441	1	399.2	265.1	BB
Clergyman	1,674	162	220.7	146.5	YB
Clothing maker (craftsman)	1,774	14,107	159.8	106.1	MC
Clothing maker (factory)	2,890	7,175	125.8	83.5	MC
Coachman, groom	1,329	705	126	83.7	BB
Coke burner	358	0	130		YB
Compositor	2,933	60	164.8	109.4	BB
Cooper	255	0	137		MC
Cordial Maker	1,188	87	75	50	YB
Dairy farm laborer	8,694	167	61.4	40.7	MC
Deliveryman	261	2	158.2	105	BB
Dentists	1,339	250	650	431.6	BB

Die/type maker	81	14	168.9	112.1	YB
Domestic nurse	1	896	122.6	90.4	BB
Draftsman	408	2	257.8	171.2	BB
Drayman, carterman, teamster	10,493	35	126	83.7	BB
Electrical apparatus maker	7	0	210		BB
Electrician	1,790	0	130		YB
Lineman	983	0	130		YB
Engine driver (farm)	3,268	0	158.2		BB
Engine driver (fireman)	1,742	0	158.2		BB
Mechanical engineer	6,971	0	210		BB
Engineer	63	4	399.2	265.1	BB
Stoker	2,196	0	183.2		BB
Engraver	117	2	240	159.4	BB
Factory manager	219	0	680.8		BB
Farm laborer	26,797	4	61.36	40.74	MC
Farm manager	246	3	303.1	201.3	BB
Ferry officer	577	0	225.8		BB
Fisherman	1,524	1	119.6	79.4	BB
Fishmonger	561	25	171.4	113.8	BB
Florist	142	117	171.4	113.8	BB
Forestry worker	6,358	6	79	52.46	YB
Founder	3,140	0	125		YB
Fruit grower laborer	3,729	0	61.36		MC
Furniture maker (craftsman)	1,411	0	132.1		MC
Furniture maker (factory)	2,589	257	104	69.1	MC
Gardener	1,583	0	101.5		BB
Gas supply worker	1,808	0	130		YB
Geologist	14	0	483.8		BB
Grocer, fruiter	10,323	1,371	171.4	113.8	BB
Guard, signalman	3,709	1	146.4	97.2	BB
Hairdresser, barber	2,906	221	122.8	81.7	BB
Harbour officer	932	3	390	326.1	BB
Hat, bonnet maker	451	579	75	50	YB
Hatter, milliner	1,871	682	75	50	YB
Health officer	113	7	620	411.7	BB
High officials	1,198	34	906.9	602.2	BB
Horse keeper	159	0	120		BB
Hospital attendant	836	664	122.6	69.5	BB
Hospital nurse	14	1,938	122.6	90.4	BB
Hotel servant	7,057	7,526	89.2	50	BB
House painter	5,340	7	125	83	YB
House servants	1,965	34,462	105.3	69.9	BB
Joiner	1,165	3	156	103.6	BB
Judges	20	3	906.9	602.2	BB
Laborer	23632	0	86.3		BB
Laundryman	546	3,158	125	49.2	BB

Law Clerks	1,267	520	498.5	202.5	BB
Leathergoods maker (artisan)	2,223	76	136.8	90.8	MC
Leathergoods maker (factory)	274	48	107.7	72.9	MC
Legal officials	171	7	721.1	481	BB
Letter carrier	718	0	202.5		BB
Lighthouse keeper	56	0	225.7		BB
Lithographer	362	17	208.5	138.4	BB
Locksmith	53	0	137.5		YB
Lodging house servant	968	3,412	89.2	50	YB
Machinist	148	0	148.6		BB
Magistrates	20	0	432.5		BB
Mailman	362	0	202.5		BB
Maltster, brewer	1,403	6	137	91	MC
Market gardener	4,758	39	145	96.3	BB
Mason	1,268	0	137.5		YB
Medical attendant	113	0	122.6		BB
Medical practitioner	1,333	83	650	163.3	BB
Messenger	882	3	106.4	70.6	BB
Midwife	0	1,569		137.5	BB
Military officers	3,096	0	304.8		BB
Milkman	2,348	125	171.4	113.8	BB
Millwright	2,629	0	210		YB
Miner	39,551	23	131.9	87.6	YB
Motorman, cab driver	432	3	93.7	62.2	BB
Moulder	3,140	0	131.2		YB
Music teacher	274	2,333	252.1	211.8	BB
Musical instrument maker	555	29	210	139.4	BB
Nursery man	1,701	3	101.5	67.4	BB
Officer, Scientific Dept.	73	2	587.5	390.1	BB
Officer, Education Dept	141	7	587.5	305.2	BB
Omnibus driver	1,145	13	154.7	102.7	BB
Optician	224	26	210	139.4	BB
Ornament makers	741	718	210	139.4	BB
Pastoral laborer	28,189	10	61.36	40.74	MC
Penal officer (skilled)	17	9	304.8	120	BB
Penal officer (regular)	296	40	128.6	92	BB
Pharmacist	1,443	134	122.6	90.4	BB
Photographer	716	399	250	166	BB
Pig farm laborer	109	0	61.36		MC
Pilot	111	0	275.3		BB
Plasterer	1,681	0	125		YB
Plumber	3,599	0	130		BB
Police officers (skilled)	73	0	450		BB
Police officers (regular)	2,563	0	162.5		BB
Porter, gate keeper	556	5	86.7	60	BB
Postmaster, sorter	2,131	690	364.6	242.1	BB

Poulterer	142	8	171.4	113.81	YB
Poultry farm laborer	1,191	0	61.36		MC
Printer	682	116	184.1	122.2	BB
Quarry man	952	0	94		YB
Railroad labor	6,921	243	121	80.3	YB
Railway station master	3,016	12	202.5	134.5	BB
Restaurant servant	1,478	2,706	89.2	50	BB
Road laborer (navvy)	10,873	1	87.5	58.1	YB
Rope/canvas maker	78	0	85.4		YB
Sail maker	119	3	137	91	MC
Sanitary inspector	209	2	281.1	186.6	BB
Sawmill worker	1,335	7	89	59.1	YB
Scientific instruments maker	21	0	210		BB
Ship master, seaman	4,742	0	114		BB
Shipwright	1,809	0	210		BB
Shirt maker	90	867	93.7	62.2	YB
Sick nurse	17	1,353	122.6	90.4	BB
Silversmith	977	115	137.5	91.3	YB
Slater, shingler	272	0	125		YB
Smelter	1,261	0	125		YB
Sports equipment maker	74	37	210	139.4	BB
Stable keeper	532	8	121	80.3	BB
Station agent	1,399	31	202.5	134.5	BB
Station manager	2,860	0	202.5		BB
Stevedore, wharf labor	5,643	0	121		BB
Steward	1,351	82	131	87	BB
Store manager	226	2	171.4	113.8	BB
Storekeeper	6,900	2,963	171.4	113.8	BB
Street cleaner, chimney sweeper	1,967	0	79		BB
Sugar laborer	288	7	61.4	40.7	MC
Surgical instrument maker	41	5	210	139.4	BB
Surveyor	1499	8	382	253.6	BB
Tanner, soap maker	8016	154	81	53.7	YB
Tea/coffee seller	698	89	171.4	113.8	BB
Teachers	3,878	5,430	257.1	211.8	BB
Telegraph- Stationmaster	697	0	202.5		BB
Telegraph/telephone maker	12	0	210		BB
Telephone officer	840	0	202.5		BB
Textile worker	525	460	75	49.8	YB
Tinsmith	876	0	115		YB
Tobacconist	606	69	171.4	113.8	BB
Tramway driver	4,870	0	158.2		BB
Tutor	438	964	257.1	211.8	BB
Typist	1,230	161	150	99.6	BB
Umbrella maker	70	197	90	59.8	YB
Professor	93	6	587.5	390.1	BB

Veterinarian	161	5	300	199.2	BB
Vineyard laborer	383	5	61.4	40.7	MC
Watch maker	662	6	210	139.4	BB
Waterman	266	0	119.6		BB
Wheelwright	595	0	210		BB
Wine seller	708	78	171.4	113.8	BB
Wood chopper	1,284	0	79		BB
Wool washer	1,064	29	52	34.5	YB
Investment societies clerks	47	6	190	126.2	BB
Bank clerks	3,215	20	174	115.5	BB
Railway, tramway, shipping, telegraph clerks	5,415	72	209	138.78	BB
Station clerk	2860	0	224.2		BB

Table A6b: Australian Earnings Social Table, 1910

Occupation	Employment		Earnings (£)	
	Male	Female	Male	Female
Accountant, auditor	1,943	178	346.7	230.21
Actuary, underwrite, auctioneer	10,649	904	346.7	230.21
Architect	1,515	53	452.6	300.53
Arms maker	285	202	210	139.44
Assayer	451	1	260	
Bailiff	184	0	259.1	
Baker	17,314	3,834	143.2	95.08
Banker, broker	13,770	45	660	438.24
Barge master, lighterman	226	0	149.6	
Barrister	2,949	0	560	
Biologist, botanist	64	3	483.8	321.24
Blacksmith	17,157	11	125	
Boiler maker	3,845	1	210	
Bookbinder	1,671	2,689	164.3	
Boot maker (craftsmen)	8,749	0	137	
Boot maker (factory)	8,560	4,626	108	71.5
Brick layer	8,031	0	137.5	
Brick maker	5,976	34	137.5	
Butcher	21,252	653	72	47.81
Meat/fish curer	465	147	72	47.81
Carpenters	33,885	3	139.8	92.83
Carriage maker	14,610	101	210	139.4
Charity officer	272	431	187	124.2
Charwomen, cleaner	227	2,115	79	52.7
Chemist	171	5	483.8	321.2
Church officer	259	61	187	124.3
Civil engineer	1,228	11	399.2	265.1
Clergyman	5,211	629	220.7	146.5
Clothing maker (craftsman)	4,373	44,033	159.8	106.1

Clothing maker (factory)	7,124	22,396	125.8	83.5
Coachman, groom	3,307	2,115	126	83.7
Coke burner	378	0	130	
Compositor	7,540	140	164.8	109.43
Cooper	701	2	137	
Cordial Maker	3,388	181	75	50
Dairy farm laborer	17,216	523	52	34.5
Deliveryman	569	7	158.2	105.04
Dentists	2,979	668	650	431.6
Die/type maker	156	15	168.9	112.15
Domestic nurse	3	2,683	122.6	90.4
Draftsman	1,033	8	257.8	171.18
Drayman, carterman, teamster	25,493	79	126	83.66
Electrical apparatus maker	19	0	210	
Electrician	4,645	100	130	
Lineman	2,676	0	130	
Engine driver (farm)	9,187	0	158.2	
Engine driver (fireman)	4,535	0	158.2	
Engineer	123	12	399.2	265.07
Mechanical engineer (stoker)	5,730	0	183.2	
Engraver	323	14	240	159.36
Factory manager	718	0	680.83	
Farm laborer	92,104	102	52	34.53
Farm manager	1,206	7	303.12	201.28
Ferry officer	618	9	225.8	
Fisherman	7,795	1	119.6	79.41
Fishmonger	1,411	68	171.4	113.81
Florist	326	309	171.4	113.81
Forestry worker	24,393	12	79	52.46
Founder	10,667	62	125	83
Fruit grower laborer	14,185	438	52	34.53
Furniture maker (craftsman)	3,743	0	132.08	
Furniture maker (factory)	6,867	559	104	69.06
Gardener	4,162	0	101.5	
Gas supply worker	4,003	18	130	
Geologist	30	0	483.8	
Grocer, fruiter	28,330	3,887	171.4	113.81
Guard, signalman	10,219	22	146.4	97.21
Hairdresser, barber	6,807	509	122.83	81.69
Harbor officer	2,362	6	390	326.1
Hat, bonnet maker	1,257	1,654	75	50
Hatter, milliner	4,387	1,526	75	50
Health officer	296	18	620	411.68
High officials	11,771	730	906.9	602.18
Hospital attendant	2,169	1,875	122.6	69.5
Hospital nurse	17	5,001	122.6	90.4

Hotel servant	28,970	22,280	89.2	50
House painter	13,912	21	125	83
House servants	4,795	97,163	105.26	69.89
Joiner	3,270	6	156	103.58
Judges	54	0	906.9	
Laborer	60,634	0	86.3	
Laundryman	1,771	7,122	125	49.2
Law Clerks	3,344	1,300	498.5	202.5
Leather goods maker (artisan)	313	650	136.76	90.81
Leather goods maker (factory)	7,027	432	107.68	72.9
Legal officials	414	16	721.1	480.97
Letter carrier	1,729	0	202.5	
Lighthouse keeper	338	0	225.7	
Lithographer	976	40	208.5	138.44
Locksmith	153	0	137.5	
Lodging house servant	2,583	9,695	89.2	50
Machinist	16,218	0	148.6	
Magistrates	155	0	432.5	
Mailman	744	0	202.5	
Market gardener	15,488	147	145	96.28
Mason	4,185	0	137.5	
Medical attendant	204	0	122.6	
Medical practitioner	3,630	275	650	163.3
Messenger	2,441	4	106.4	70.65
Midwife	0	4,487		137.5
Military officers	5,261	0	304.8	
Milkman	5,611	439	171.4	113.81
Millwright	8,526	0	210	
Miner	103,475	735	131.9	87.58
Motorman, cab driver	905	10	93.7	62.22
Music teacher	735	6,044	252.1	211.8
Musical instrument maker	1,162	54	210	139.44
Nursery man	6,725	48	101.5	67.4
Officer, Scientific Dept.	246	18	587.5	390.1
Officer, Education Dept.	368	30	587.5	305.2
Omnibus driver	2,649	30	154.7	102.72
Optician	525	58	210	139.44
Ornament makers	292	2,032	210	139.44
Pastoral laborer	57,843	43	52	34.5
Penal officer (skilled)	52	13	304.8	120
Penal officer (regular)	755	105	128.6	92
Pharmacist	3,810	377	122.6	90.4
Photographer	1,923	1092	250	166
Pilot	262	0	275.3	
Plasterer	3956	0	125	
Plumber	9440	0	130	

Police officers (skilled)	178	0	450	
Police officers (regular)	6,369	0	162.5	
Porter, gate keeper	1,369	17	86.7	60
Postmaster, sorter	5,054	2016	364.6	242.09
Poulterer	316	31	171.4	113.81
Printer	1,578	345	184.1	122.24
Quarry man	3,253	0	94	
Railroad labor	21594	625	121	80.34
Railway station master	8,789	217	202.5	134.46
Restaurant servant	3,480	7,210	89.2	50
Road laborer (navvy)	27,026	6	87.5	58.1
Rope/canvas maker	161	0	85.4	
Sail maker	375	20	137	90.97
Sanitary inspector	367	6	281.1	186.65
Sawmill worker	4,450	18	89	59.1
Scientific instruments maker	57	0	210	
Ship Master/Seaman	11,621	0	114	
Shipwright	2,774	0	210	
Shirt maker	259	2,322	93.7	62.22
Sick nurse	23	4,008	122.6	90.4
Silversmith	2,610	232	137.5	91.3
Slater, shingle	486	0	125	
Smelter	5,271	0	125	
Sports equipment maker	169	44	210	139.44
Stable keeper	1,580	25	121	80.34
Station agent	3535	87	202.5	134.46
Stevedore, wharf labor	13,564	0	121	
Steward	3,701	243	131	86.98
Store manager	1,193	4	171.4	113.81
Storekeeper	15,770	6,759	171.4	113.81
Street cleaner, chimney sweeper	5,107	0	79	
Sugar laborer	5,031	77	52	34.5
Surgical instrument maker	102	16	210	139.44
Surveyor	3,856	14	382	253.65
Tanner, soap maker	3,536	25	81	53.78
Tea/coffee seller	1,668	231	171.4	113.81
Teachers	9,500	15,206	257.1	211.8
Telegraph- Stationmaster	1943	0	202.5	
Telephone officer	2676	0	210	
Textile worker	1,712	1,882	75	49.8
Tinsmith	2,669	39	115	76.36
Tobacconist	1,278	233	171.4	113.81
Tramway driver	8738	55	158.2	105.04
Tutor	998	1,985	257.1	211.8
Typist	3,346	606	150	99.6
Umbrella maker	182	296	90	59.76

Professor	233	34	587.5	390.1
Veterinarian	406	6	300	199.2
Vineyard laborer	2,121	88	61.4	40.7
Watch maker	1,830	17	210	139.4
Waterman	479	0	119.6	
Wheelwright	2026	0	210	
Wine seller	1,969	209	171.4	113.8
Wood chopper	4,171	271	79	
Wool washer	1809	30	52	34.5
Investment societies clerks	111	2	190	126.2
Bank clerks	8803	51	174	115.5
Railway, tramway, shipping, telegraph clerks	15006	185	209	138.78
Station clerk	1098	0	224.2	

Table A6c: Australian earnings distribution by decile, 1910 (%)

Decile	NSW LF weights	AUS LF weights
1st	3.88	3.03
2nd	4.65	4.58
3rd	5.51	5.40
4th	6.57	6.07
5th	8.30	7.28
6th	9.49	7.65
7th	9.96	8.42
8th	11.26	11.16
9th	14.19	15.29
Top	26.16	31.11